AMERICAN VETERINARY REVIEW,

JULY, 1893.

EDITORIAL.

FIRST VETERINARY CONGRESS OF AMERICA—UNITED STATES VETERINARY MEDICAL ASSOCIATION.—We have nearly reached the ides of July, the days are swiftly passing by, and but three months intervene before the veterinarians of this continent must have their preparations completed for their trip to Chicago. That much has been done to insure the success of this affair there is no doubt, but is everything made ready? Are all the preparations completed? Is all the work of all the committees finished, and all the preparations smoothly progressing? All these are questions which we feel bound to ask ourselves, as well as to present to those who have been entrusted with the responsibilities respectively of the great occasion. We ask them because we fear that through some unforeseen events and possible complications, some committees may have been delinquent or tardy in the execution of their plans, and may not succeed in "holding up their end." There is yet time enough left, but there is none to be lost or wasted.

Though we may have fears in some directions, we cannot have any when the work of the secretary of the Association is in question. We have received another circular from Dr. Hoskins, which not only announces the issue of the

proceedings of the last two meetings of the Association, but gives us also new information relating to the International Congress. If we consider all that we are promised, all that we are to expect from the committees through their reports, without counting the unexpected, the few days which the meeting is to occupy will never be sufficient unless everything is well prepared, and all the items so adjusted as to move on in the style of clock-work.

Dr. Hoskins last circular is as follows:

PHILADELHHIA, May 25, 1893.

To the Members of the United States Veterinary Medical Association:

The reprints of our proceedings, containing a complete account of our meetings at Washington and Boston for 1891-92 will emerge from the printer's hands in the next ten days.

These reprints will contain all the papers, reports of committees; discussion; with a list of officers, past and present; those who have resigned; the deceased members; those dropped from the rolls; those expelled, and much other information relative to the Association that it will be found of interest and value as a book of reference.

This book will be bound in cloth, with gilt top, for twenty-five cents, while the cost bound in paper will be but five cents. All those desiring that their copies shall be bound in gilt will immediately give notice to this office and transmit twenty-five cents by postal note or postage stamps.

Copies of these reprints will be issued to all members of the Association. To all others desiring a copy the exact cost of printing and binding will be charged for the same.

I desire to give notice at this time of the near approach of our International Congress at Chicago, and to say to the members that everyone has a duty to perform in making this meeting a grand success. The officers and committees are actively at work, and the three leading subjects that are to be considered and discussed will be handled in a very thorough and interesting manner. The general committee reports will be of special interest, and in addition we have offered the following papers:

"Swine Plague and Hog Cholera"—Drs. Welch and Clement.

"Contagious Pleuro-Pneumonia"—Dr. A. W. Clement.

"Millet Disease of Horse"—Dr. T. D. Hinebaugh.

"Fistulæ"—Dr. M. H. Reynolds.

The consideration of our Association having a National charter under the United States Government will be acted upon at this meeting.

A list of honorary members will be considered that has for its aim proper recognition of veterinarians in every country of the world who have contributed largely to the general advancement of the profession.

Many other matters of equal importance will be taken up and disposed of at this meeting, and it is urged that every member of the Association shall lay

aside his business and work and attend this coming meeting, as it will probably be the only International Congress ever held in America during the lives of the present membership of our Association; and its importance and value will wholly depend upon the united efforts of those upon whom the responsibility of its success depends—and this is upon our members.

From time to time bulletins will be issued from the Secretary's office, containing details of plans and arrangements, railroad rates, etc., in ample time for the proper preparation for our meeting, and at a time when the best rates may be obtained.

By order of the President.

W. L. WILLIAMS, Pres't, Lafayette, Ind.

W. HORACE HOSKINS, Sec'y. 3452-54 Ludlow St., Phila. Pa.

DELEGATES TO THE CHICAGO FAIR.—The *Veterinary Journal* sends us the following greeting:

"The German Government has deputed Prof Dickerhoff, rector of the Berlin Veterinary High School, to represent Prussia as Commissioner for Veterinary Affairs at the forthcoming Chicago Exhibition."

We take this opportunity to call the attention of our United States Veterinary Medical Association, and principally of the International Committee, to this action of the German Government.

We have personal information which justifies us in the belief that Prof. Dickerhoff will not alone occupy the position of an authenticated delegate and foreign representative, and it is to be hoped that special effort will be made to receive him and any others who may come from other countries under similar auspices, in a manner that shall leave no room for reflections upon our hospitality or want of appreciation of their professional repute and position.

CONGRESS FOR THE STUDY OF HUMAN AND ANIMAL TUBERCULOSIS.—The investigation of whatsoever subjects are connected with the study of this scourge of animal life, both human and mute, still continues to command the attention of medical men and veterinarians on the European continent, principally in France, and the third session of the congress which has been organized for its promotion has been called to take place at the close of the present month. We have just received the circular and programme of the

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work prescribed for the meeting, together with the questions which are to be discussed. In the organization of the permanent committee we find the names of prominent veterinarians, such as Nocard, Leblanc, Rossignol, and many others; and the prominence of the veterinarian, and the value of the services he is competent to render in facilitating the labors of the congress, become the more evident as we refer to the positions to which our colleagues on the committee are assigned. Five members of the profession may be counted in a list of thirteen members, a number which is well justified when it is considered that among the questions to be treated are such as "the relative influence of contagion and heredity in the propagation of tuberculosis;" "the various means of diagnosis in bovine tuberculosis, and especially researches in the inoculation of tuberculin as a sure means of diagnosis of the disease in bovines;" and "the necessity for generalization of the practice of meat inspection." None of these questions can very well be solved without the assistance of the veterinarian.

The question of tuberculosis is not only occupying the attention of European sanitarians, but is also attracting notice on this side of the Atlantic. Without alluding to the official action of the New York State Board of Health, whose work of last year is to be resumed at an early date, the public at large begins to be awake to the existence of the disease in the United States, and inquiries are made from various directions of those who are supposed to know more than others on the subject. The *Breeders' Gazette* of June 14th prints a letter from Dr. E. Salmon in answer to an inquiry as to the percentage of tuberculosis in dairy cattle, and we extract so much of the letter as answers this inquiry. Coming from such an authority, we feel that certain statements which we made some years ago on this subject are receiving an approval based upon facts of whose existence we were then not even aware. The letter, in part, reads as follows:

The percentage of tuberculosis in dairy cattle in this country has never been ascertained, and in Europe we may say that the information on this subject is of more or less fragmentary nature. A few investigations have been made as to

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the proportion of dairy cattle affected with tuberculosis in this country, the most extensive being the observations made by the veterinarians of the Bureau of Animal Industry during the inspection and slaughter of cattle in the pleuro-pneumonia work. These observations indicated that from three to five per cent of the dairy cows about our large cities were affected. Some veterinarians have estimated that the percentage was much higher than this. It should be remembered, however, that these conclusions were reached by examining the lungs during the life of the animal, and by such hasty post-mortem examinations as alone were possible at the large slaughter-houses where the killing was generally done.

Recent investigations have shown that observations made in this way are very unreliable, and that the percentage of affected animals so discovered must be entirely too low. Within the last two or three years tuberculin has been extensively used to determine the existence of tuberculosis in animals, and the results which have been reached with it show that a large proportion of the tuberculous animals have been overlooked both in the examination before death and in the ordinary post-mortem examinations. Tuberculin has been used to a considerable extent in diagnosing this disease in Europe, and instead of there being from five to fifteen per cent. of the dairy cows affected, as appeared from the older statistics, scientists are now beginning to talk about from forty to seventy-five per cent. of the cows showing the presence of this disease.

Tuberculin has not very largely been used in the United States, and in most cases where it has been the herds were known to be tuberculous. For this reason the results of its use in this country do not furnish a reliable indication of the average percentage of animals affected. In the individual herds which have been tested from fifty to seventy per cent. of the animals have been found affected. Just what percentage of animals would be found affected if all the dairy cows of a large distict were tested with tuberculin cannot at this time be predicted. In Europe as many as two hundred and fifty animals have been tested by the same observer, and have shown from sixty to seventy-six per cent. tuberculous. This indicates that a much larger proportion of dairy cows are affected than has been supposed. We should say in explanation that many of the animals which were shown to be tuberculous by the use of tuberculin are only very slightly affected, and it requires the most careful scientific examination of the carcass in a considerable proportion of the cases to discover the tuberculous centers. Sometimes only one of the small lymphatic glands is affected, and a microscopic examination may be necessary to discover the effects of the disease.

In connection with this, the report presented in this issue of the REVIEW, by Dr. J. Faust, will carry its weight in relation to the value of tuberculin as a means of diagnosis, as well as an addition to the statistics establishing the relative percentage of cases in a given number of animals forming a herd.

PRACTICAL PROTECTION AGAINST TUBERCULOUS INFECTION.—The holding of the expected Congress, the past and current investigations of Boards of Health, the experiments with

tuberculin, and all the other means of sanitation at the present time under discussion, and which have of late occupied the attention of sanitarians and scientists, will, without doubt, be followed by the public with great interest and curiosity; but practical measures are now beginning also to become the order of the day. This is illustrated by the institution of a project inaugurated by several prominent physicians of New Jersey, under the lead of Dr. H. L. Coit, for providing the public with an article of thoroughly healthy milk.

We are pleased to notice in the proposed plan of organization the important part which is assigned to the veterinarian, who, with the chemist and the bacteriologist, is to be called upon to act as an expert to decide upon the condition, as to health or disease, of the cows which are to furnish the fluid which is to be put on the market.

This recognition of the veterinarian and the value of his function by the medical fraternity in the little State of New Jersey, is one which is likely to be soon followed by other States. And a valuable addition we are proud to call it, to the means of preserving our future national health. New Jersey is in some particulars an antiquated little commonwealth, but this is taking a long step in advance of some of her more bulky sisters.

ORIGINAL ARTICLES.

TUBERCULIN

AS A MEANS OF DIAGNOSIS.

By John Faust, V.S., Poughkeepsie, N. Y.

On April 30th I was called to the farm of John G. to hold a post-mortem to ascertain the cause of the death of one of the dairy cows. Post-mortem showed general tuberculosis. The owner was led to have the post-mortem held by his having a suspicion of some contagious disease among his cattle, a large number of them not having been doing well for a long time. The owner then requested me to examine his herd, which I did. The physical examination showed a large percentage affected with tuberculosis, and I so stated to the owner, and he in turn

reported the same to the State Board of Health. The Board ordered me to examine said herd, which I did, assisted by my son, Dr. Otto Faust. By virtue of a tuberculous history which we had personal knowledge of, we concluded to make a scientific test by the use of the tuberculin furnished by the Bureau of Animal Industry, at Washington, D. C. The amount used was s. c. c., and the following is the complete report of our investigation. The post-mortems were conducted by Dr. Austin Peters, of Boston, and myself.

	No. 1.—Wild Brindle—9 years old.		No. 2.—Becky—6 years old.	
	Before Injection. May 19.	After Injection. May 20.	Before Injection. May 19.	After Injection. May 20.
7 a.m.		102.0		104.0
9 "	103.0	102.2	102.1	106.0
11 "	101.1	101.0	100.4	106.5
1 p.m.	100.1	101.0	101.2	106.1
3 "	101.3	101.4	101.3	106.3
5 "	101.2	102.1	102.4	106.0
7 "	101.0	103.2	102.3	106.3
9 "	101.3	104.3	102.3	107.0
11 "	101.1	103.4	102.3	105.2

No. 1.—No reaction; not killed.

Post-mortem No. 2.—Tuberculosis in left lung. Tuberculosis in mediastinal glands. Two or three nodules in right lung; a few tubercular nodules on the omentum over the pouch.

	No. 3. — Registered Holstein. Large Black and White Cow.		No. 4.—Little Brindle, 10 years old.	
	Before. May 19.	After. May 20.	Before. May 19	After. May 20.
7 a.m.		104.2		101.3
9 "	103.4	106.0	102.0	102.1
11 "	102.3	102.3	102.0	105.1
1 p.m.	102.2	104.0	101.0	106.2
3 "	103.3	102.3	101.3	107.0
5 "	102.0	101.4	101.3	105.4
7 "	101.1	101.4	102.2	104.4
9 "	102.0	101.4	101.3	104.3
11 "	102.3	103.3	101.0	103.2

Post-mortem No. 3.—Three nodules in liver.

Post-mortem No 4.—All mediastinal glands swollen and containing numerous foci of a cheesy and calcareous matter. In posterior part of both lungs are several tuberculous tumors, size of clenched fists. In liver several small tubercular nodules.

	No. 5.—Yellow Jersey, 5 years old.		No. 6.—Black Jersey, 5 years old.	
	Before. May 19.	After. May 20.	Before. May 19.	After. May 20.
7 a.m.		104.0		104.2
9 "	102.0	104.4	103.4	106.0
11 "	101.0	104.4	102.4	104.3
1 p.m.	101.4	106.0	104.0	105.3
3 "	103.0	104.0	105.3	105.0
5 "	102.1	104.3	105.0	105.1
7 "	102.3	103.3	106.0	105.0
9 "	103.1	104.0	105.0	104.2
11 "	103.0	103.4	105.1	104.3

Post-mortem No. 5.—A few tuberculous spots on liver. Mediastinal gland small and tuberculous. Small tubercles in left lung.

No. 6.—Not killed at this writing.

	No. 7.—Big Bull, 5 years old.		No. 8.—Sopharn. Brindle mother died recently of Tuberculosis.	
	Before. May 19.	After. May 20.	Before. May 19.	After. May 20.
7 a.m.		102.1		104.4
9 "	102.1	103.0	103.0	106.2
11 "	100.0	105.0	102.0	105.0
1 p.m.	100.1	106.0	101.4	106.1
3 "	101.1	106.2	101.3	106.3
5 "	101.2	107.0	101.4	105.4
7 "	102.0	105.4	101.4	105.2
9 "	102.0	105.0	101.3	105.2
11 "	100.4	105.2	101.4	104.3

Post-mortem No. 7.—All mediastinal glands tuberculous, containing a caseous material. Tubercle in posterior part of right lung.

Post-mortem No. 8.—Posterior mediastinal glands size of hen's egg, containing tubercular foci of old form. Spots inposterior part of left lung; a large mass in right lung; a little deposit on ribs of both sides; two or three nodules in liver. Liver a little indurated.

	No. 9.—Blue and White Cow, 10 years old.		No. 8.—Yellow & White Cow. 12 years old.	
	Before. May 19.	After. May 20.	Before. May 19.	After. May 20.
7 a.m.		103.3		102.1
9 "	101.2	105.1	101.4	102.0
11 "	90.3	103.3	100.3	104.0
1 p.m.	100.0	104.3	100.4	105.2
3 "	101.3	105.0	101.2	105.1
5 "	102.3	104.3	103.0	104.4
7 "	101.4	104·3	102.0	104.3
9 "	102.3	104 3	101.3	104.3
11 "	102.0	104.2	101.1	104.1

Post-mortem No. 9.—Cow very much emaciated. General tuberculosis of lungs, liver and spleen. Tubercles on mesentery. Large tubercles on pleura. Liver spotted with tubercles. Kidney anæmic. Both retro-pharyngeal glands swollen, one the size of a hen's egg, the other the size of a goose's egg; filled with a thin fluid containing calcareous matter.

Post-mortem No. 10.—No tuberculosis, but cow's pouch contained numerous nails, hay wires, bits of iron and stone; this would account for the reaction.

	No. 11.—Davids'.		No. 12.—Hams', 9 years old.	
	Before. May 19.	After. May 20.	Before. May 19.	After. May 20.
7 a.m.		102.6		101.3
9 "	101.3	102.0	102.2	102.2
11 "	100.0	103.2	100.3	101.0
1 p.m.	100.3	105.1	101.0	105.3
3 "	102.0	106.0	101.0	106.0
5 "	102.0	104.3	100.3	105.3
7 "	101.0	104.0	101.4	105.1
9 "	101.2	103.0	102.0	105.1
11 "	101.3	102.2	101.3	105.1

Post-mortem No. 11.—Retro-pharyngeal gland contains a single focus the size of a pea. Mediastinal gland swollen, containing tubercular deposits. In middle lobe of right lung and posterior lobe of same are tuberculous tumors the size of clenched fists. On pleural surface of right lung numerous tubercles of new formation the size of beans, single and in clusters. On corresponding side of ribs a collection of tubercles two inches high.

Post-mortem No. 12.—Mediastinal glands tuberculous. Cysts in kidney.

	No. 13.—Irish.		No. 14.—Silman.	
	Before. May 19.	After. May 20.	Before. May 19.	After. May 20.
7 a.m.		102.3		102.0
9 "	102.2	104.3	102.0	102.2
11 "	101.0	105.4	103.0	101.2
1 p.m.	102.0	107.6	101.0	101.3
3 "	101.3	106.3	101.2	101.4
5 "	101.0	105.4	103.2	102.2
7 "	101.0	104.0	102.0	103.0
9 "	101.4	103.0	102.0	105.1
11 "	101.1	102.2	101.4	104.4

Post-mortem No. 13.—Small deposit starting in right lung. Considerable in posterior lobe of left lung.

No. 14.—No reaction. Cow was sound.

	No. 15.—Simson. Brown, Registered Jersey.		No. 16.—Sizzy. Black, Half Jersey.	
	Before. May 19.	After. May 20.	Before. May 19.	After. May 20.
7 a.m.		101.3		103.0
9 "	102.0	102.0	101.4	105.3
11 "	102.2	101.5	100.2	105.4
1 p.m.	201.3	101.3	102.1	106.4
3 "	101.0	101.4	104.4	106.1
5 "	101.2	102.0	102.2	105.2
7 "	101.4	102.0	102.1	105.0
9 "	101.0	101.2	101.4	104.1

Post-mortem No. 15.—This cow did not react with the tuberculin, but had a suspicious cough. Was killed to verify tuberculin, and not a particle of tuberculosis could be found after a most diligent search.

Post-mortem No. 16.—Both retro-pharyngeal swollen, containing several deposits of caseous substances. Tubercles in mesentery, hydro-nephritis of kidney. Mediastinal gland ten inches long and four inches thick, containing several deposits of different sizes and dates. Diffuse tubercular pleuritis and numerous large tubercular tumors in lungs. Diffuse tubercular peritonitis coloring all organs in abdominal cavity with red nodular tubercles.

	No. 17.—Doty.		No. 18—White Marshall, 7 yrs.	
	Before. May 19.	After. May 20.	Before. May 19.	After. May 20.
7 a.m.		101.4		102.2
9 "	100.4	101.3	102.2	103.0
11 "	101.1	99.3	104.0	103.2
1 p.m.	101.0	101.3	101.1	106.0
3 "	101.3	103.0	101.2	106.1
5 "	101.2	105.0	101.4	105.4
7 "	101.0	105.0	102.0	104.2
9 "	101.2	106.1	102.0	105.1
11 "	101.2	105.0	101.4	104.4

Post-mortem No. 17.—Middle front teeth gone, and all others ready to drop out. Tubercle in anterior lobe of right lung; two in posterior lobe of left. Contents cheesy.

Post-mortem No. 18.—All mediastinal glands affected; two cardiac glands as large as a goose egg. Anterior lobe of left lung filled with newly-formed tubercles. In middle lobe of same a tumor the size of a hen's egg.

	No. 19.—Brown Marshall.		No. 20.—Red Marshall.	
	Before. May 19.	After. May 20.	Before. May 19.	After. May 20.
7 a.m.		102.1		101.3
9 "	101.3	102.2	102.1	102.1
11 "	99.3	101.2	100.0	101.2
1 p.m.	101.0	102.0	100.4	102.3
3 "	101.4	101.2	101.2	104.4
5 "	101.3	101.2	101.3	106.0
7 "	101.4	101.2	101.4	105.3
9 "	101.4	101.2	102.0	105.0
11 p.m.	101.1	101.1	101.1	103.3

No. 19.—No reaction. Pronounced sound, and was not destroyed.

Post-mortem No. 20.—Mediastinal glands affected. Liver speckled with numerous tuberculous spots.

	No. 21.—Black Cow, White Star, 30 months old. One Calf. Half Holstein.		No. 22.—Red Cheek, White Cow, 12 years old.	
	Before. May 21.	After. May 22.	Before. May 21.	After. May 22.
7 a.m.		101.3		103.6
9 "	101.0	103.2	100.3	102.4
11 "	103.0	106.2	100.1	103.2
1 p.m.	102.0	106.3	101.2	104.2
3 "	101.4	104.4	101.2	106.2
5 "	102.2	103.2	101.3	106.3
7 "	102.1	103.1	102.0	104.3
9 "	102.0	104.3	102.2	105.2
11 "	102.0	105.0	101.2	105.0

Post-mortem No. 21.—Numerous tubercles gathered in groups on the omentum. Mediastinal gland, six inches long and three inches wide, filled with a hard, old-formed tuberculous material. Posterior lobe of each lung affected. Small deposit beginning on sides of ribs.

Post-mortem No. 22.—Right retro-pharyngeal gland swollen, and containing cheesy and calcareous matter.

	No. 23.—Brindle Sucker.		No. 24.—30 Months' old Cow. Mother died of Tuberculosis.	
	Before. May 21.	After. May 22.	Before. May 21.	After. May 22.
7 a.m.		104.1		104.0
9 "	100.3	106 3	102.0	106.0
11 "	101.2	106.4	103.3	106.0
1 p.m.	101.0	106.1	102.3	106.0
3 "	102.0	105.3	103.2	106.0
5 "	101.2	106.0	103.3	106.0
7 "	101.4	104.4	103.1	105.0
9 "	103.0	104.1	102.4	104.0
11 "	100.4	104.2	102.1	103.3

Post-mortem No. 23.—A tuberculous deposit on posterior external margin of right lung. A small spot in the liver. A nodule the size of a pea in anterior portion of posterior lobe of left lung.

Post-mortem No. 24.—Left retro-pharyngeal swollen to the size of a large pigeon's egg, containing numerous small tubercular foci. Tubercles in posterior lobe of right lung. Deposits of minute tubercles on sides of ribs. Posterior face of left lung newly affected.

	No. 25.—Red Sucker.		No. 26.—Phillips. Respiration roaring.	
	Before. May 21.	After. May 22.	Before. May 21.	After. May 22.
7 a.m.		102.2		101.2
9 "	101.2	101.3	101.3	104.2
11 "	102.0	102.3	101.4	106.1
1 p.m.	101.3	105.2	102.1	106.0
3 "	102.0	105.0	102.2	105.0
5 "	102.0	105.0.	102.4	105.0
7 "	102.0	104.0	102.3	106.1
9 "	102.0	103.1	102.2	106.0
11 "	102.0	103.0	102.0	105.2

Post-mortem No. 25.—Cardiac gland tuberculous, containing hard, old-formed material. A fresh tuberculous tumor, the size of a hen's egg, in the middle lobe of right lung.

Post-mortem No. 26.—Sub-maxillary very cheesy. Lungs anæmic. Liver highly affected with tuberculosis. A few nodules in left lung. Posterior mediastinal glands slightly tuberculous. Tubercles in spleen.

	No. 27.—Young Benny. 2-year old Bull. Half Holstein.		No. 28.—Black and White Speckled Heifer. Half Holstein. 30 months old.	
	Before. May 21.	After. May 22.	Before. May 21.	After. May 22.
7 a.m.		104.0		103.3
9 "	101.3	101.1	101.3	102.2
11 "	100.4	105.4	101.0	101.1
1 p.m.	100.2	104.4	101.0	102.3
3 "	100.4	104.2	102.1	104.3
5 "	101.0	104.4	101.0	105.2
7 "	101.1	103.4	102.0	106.1
9 "	101.1	104.1	102.3	105.0
11 "	101.0	102.3	101.3	104.1

Post-mortem No. 27.—Left retro-pharyngeal size of a small hen's egg, filled with cheesy material.

Post-mortem No. 28.—Numerous tubercular nodules on small intestines and rumen.

	No. 29.—2-year old Heifer. Lymphatic glands at lower corner of lower maxilla swollen. Respiration roaring.		No. 30.—Small Black Heifer, 30 months old.	
	Before. May 21.	After. May 22.	Before. May 21.	After. May 22.
7 a.m.		101.2		101.0
9 "	102 0	106.0	100.3	102.3
11 "	101.3	107.0	101.2	104.0
1 p.m.	101.0	106.2	101.2	105.2
3 "	102.2	106.0	101.1	105.0
5 "	101.4	106.0	101.4	105.2
7 "	102.0	106.0	102.1	105.3
9 "	102.1	105.1	102.3	104.4
11 "	101.2	104.2	101.3	104.4

Post-mortem No. 29.—Retro-pharyngeal glands swollen to five inches long and three inches wide, containing tuberculous

matter. Tubercle in posterior lobe of right lung. Post-mediastinal slightly tuberculous. A little deposit in left lung.

Post-mortem No. 30.—Glands in head sound. Two post-mediastinal glands slightly affected. Posterior part of right lung affected with fresh tuberculosis.

	No. 31.—Blue-spotted Holstein, 30 months old.		No. 32.—Red Holstein Heifer. 30 months old.	
	Before. May 21.	After. May 22.	Before. May 21.	After. May 22.
7 a.m.		101.0		102.4
9 "	102.1	103.0	102.0	104.0
11 "	101.4	104.3	101.4	105.3
1 p.m.	101.2	105.1	101.3	106.0
3 "	101.3	105.3	102.2	106.3
5 "	101.4	105.0	102.3	106.1
7 "	101.3	105.0	102.4	106.1
9 "	101.3	103.4	103.0	104.1
11 "	101.3	103.1	103.0	104.0

Post-mortem No. 31.—Liver, lungs, spleen and omentum vastly affected with tuberculosis. Large numbers of groups of tubercles on sides of ribs. Mesentery lymphatic badly affected with tuberculosis. Right retro-pharyngeal gland size of goose egg. Diffused tuberculosis in thoracic and abdominal cavities, involving all organs.

Post-mortem No. 32.—Post-mediastinal glands swollen, and containing numerous fresh tubercles. Several small nodules in the liver. Hemorrhage of the heart.

	No. 33.—Old Benny, 6–7 years old.		Registered Holstein Bull.		
	Before. May 21.	After. May 22.		Before. May 21.	After. May 22.
7 a.m.		101.3	5 p.m.	102.0	106.2
9 "	101.4	105.0	7 "	101.4	106.2
11 "	101.3	106.2	9 "	101.3	106.1
1 p.m.	101.2	106.3	11 "	101.2	105.1
3 "	102.2	106.0			

Post-mortem No. 33.—Right sub-maxillary gland the size of a large hen's egg. All mediastinal glands affected. Both lungs very bad; worst in posterior part of right lung. A little fibrous deposit on the pleura. One or two small spots on liver; liver small and slightly indurated. Mesentery glands a little swollen.

CASTRATION OF CRYPTORCHIDS.

By Professor F. Mauri, of the Veterinary School of Toulouse, France.

(Continued from page 131.)

Second.—Disposition of the Testicles.

Every author who has written on testicular ectopia in the horse has recognized two principal forms of cryptorchidy. In one, the *abdominal*, the testicle remains floating in the abdominal cavity, having failed to pass through the peritoneal orifice of the inguinal canal; in the other, the *inguinal*, the organ is more or less engaged in the inguinal tract.

(*a*) *Abdominal Cryptorchidy.*—In this abnormality, which may be either simple or unilateral, or again double or bilateral, the testicle is attached to a peritoneal ligament more or less developed, which allows it to float in the neighborhood of the inguinal and prepubic, or again, more or less near the lumbar region. It is at the entrance of the pelvic cavity, along the ascending branch of the ilium in the direction of the flank, that it is most commonly found.

In his first article on cryptorchidy, published in 1875, Prof. Degive has given in a concise manner the composition and disposition of the serous band which acts as a suspensory ligament of the testicle. He says: "The suspensory apparatus of the testicle is composed of two continuous folds; the first, very long, wide, and extending from the sub-lumbar region to the entrance of the pelvis, and containing between its folds the testicular vessels in front, and the efferent canal behind. The second, much shorter, narrower and falciform, connects the external face of the first with the lateral wall of the pelvic entrance; its free border, somewhat thick, still carrying a remaining portion of the *gubernaculum testis.* The suspensory ligament of the testicle has three free borders: one, the anterior, formed by the testicular blood vessels; another, the posterior, by the efferent canal; and third, the external, having for a base the *gubernaculum testis.* These three borders are united together by two serous folds, of which the

principal one is spread between the efferent canal and the testicular blood vessels, while the other, the accessory, lies between the gubernaculum testis, the lateral wall of the pelvis and the external face of the guberculatum."

Under the name of incomplete abdominal cryptorchidy, Prof. Degive has described a variety of abdominal testicular ectopia in which there exists a rudimentary vaginal sheath, measuring from one to three centimeters in depth, containing either the testicle, or perhaps the epididymis alone, the testicle remaining floating in the abdomen.

The testicle in the abdominal cryptorchid horse varies in size, sometimes scarcely exceeding a hazel nut in dimensions, and with an epididymis twice its normal length. Generally, however, it is as large as a hen's egg, flattened, slightly elongated, and of a marked grayish color, with a vaguely elastic softness, and with an irregular surface resulting from the sinuous blood vessels which run under the tunica albuginea, the tissue of which is more loose than in the normal state.

The epididymis also varies considerably. At times, with its normal relations to the testicles, its dimensions are in regular proportion to those of the gland itself, while at other times it is greatly elongated and more or less separated from the testicle.

Mr. Montané makes the following report of a histologic examination of a testicle in a case of abdominal ectopia: "Cryptorchidy is an abnormality due to an arrest in the development of the testicle, produced by a functional incapacity of the organ. It is one of those peculiar cases of the general law by which the *function* becomes predominant and determines *the form*. The descent of the male organ in the testicular bags is the normal consequence, almost obligatory of the establishment of the testicular function. Let this function cease during one of the various stages of their regular evolution, and the testicle becomes immobilized in the form and situation which it had at that moment attained, and, as a consequence, the arrest of the genital gland in the abdominal cavity, or in the inguinal canal, constitutes either the abdominal or the inguinal cryptorchidy.

"The testicular epithelium of the cryptorchid horse retains its embryonic form, especially if the testicle has been arrested in the abdominal cavity. In two cases observed, the seminiferous canaliculi were lined on their internal face by an epithelial covering, formed of two different elements—the elongated cells, with vesicular nuclei, resting upon the walls by their periphery, having a central extremity more or less developed, and very much resembling the coming elements of *sertoli;* rounded cells, with large granular nuclei placed between the former, which they deform by their pressure, all resembling the *seminiferous cells.* In the normal testicle, these last constitute the important element of the epithelium, or that which by its multiplication and proliferation gives rise to the spermatoblasts, and consequently the spermatozoa.

"In the cryptorchid testicle, the seminiferous cells are, as it were, glued in their embryonic form, as a result of the arrest of the genital function. It is only on rare occasions that they exhibit signs of attempts at proliferation, but the formation of spermatoblasts or of spermatozoa never occurs.

"The growth of the testicular epithelium of abdominal cryptorchidy is scarcely started. Probably it is more advanced in inguinal cryptorchids. *A priori*, the supposition is even admissible that some testicles, located immediately on a level with the inguinal ring, do possess a complete spermatogenesis. This is an interesting point to elucidate. The connective tissue, more abundant than under normal conditions, offer nothing of a particularly interesting character; it seems to have a greater number of interstitial cells."

(*b*) *Inguinal Cryptorchidy.*—In this abnormality, the testicle, surrounded by its vaginal sheath, has begun its migration toward the inguinal tract, but has been interrupted at a varying height before reaching the inguinal opening. Yet one case has been found where it had passed through that opening but without having reached downward into the testicular bags, and when the horse was thrown to be castrated it could be felt through the scrotum by inguinal exploration. In the cases of inguinal cryptorchids upon which I have operated, I have always found the testicle larger and firmer than as described above.

As to the relative frequency of occurrence between the two forms of cryptorchidy, whether abdominal or inguinal, or whether taking place on the right or the left side, the statistics are very variant. In 1875, Prof. Degive wrote: "During this time (ten years) we have castrated altogether thirty-seven subjects, four of which died with sequelæ of the operation, and the remaining thirty-three recovered. Of these the greatest part had abdominal cryptorchidy; four only had simple inguinal ectopia."

According to Goubaux and Dieriex, the left side is more frequently the seat of cryptorchidy than the right. The observations I have made during the year 1891 give the following results: Out of twelve ridglings operated upon, seven were abdominal, three were on the right, and four on the left side; and five were inguinal, of which two were on the right side, and three on the left. Upon data like this it would be difficult to establish any satisfactory physiological or anatomical explanation, or to found any rule in respect to the seat of these abnormalities. Their appearance seems to be governed by chance or accident.

(*To be continued*).

INFECTIOUS ABORTION IN MARES.*

By T. J. Turner, B.A., D.V.S., State Veterinarian of Missouri.

In response to the Governor's letter of May 16, 1892, ordering me to visit the State of Montana, and investigate a troublesome malady then affecting brood mares, especially those owned by one Marcus Daly, of Riverside, Bitter Root Valley, Montana, I immediately started on the trip, and arrived at the Daly ranch on May 24th. An investigation was begun in a few days, which required about four weeks to consummate. The following is my report upon this subject, containing a history of the outbreak, its nature, and salient points pertaining to the proper management of the trouble, should it occur on any farm; also facts ascertained by experi-

* Reprint from the *Modern Medicine and Bacteriological World.*

mentation, leaving out the more minute details concerning the parasite, which are yet to be determined by investigation.

Location of Daly Ranch.—The Daly ranch is situated in the fertile valley of the Bitter Root, in Missoula County, Montana. The grounds are generally high and well drained, the tillable land being in a high state of cultivation. Much money has been expended on the property to make it a first-class breeding establishment. Many thousand (some 30,000) acres are inclosed within its confines. The climate is perfect, and feed first-class, as is also the management. To diverge slightly from the object of this report, I am constrained to say that the location of the ranch, its soil, and the climate of the country have nothing whatever to do with the cause of the malady.

History of the Outbreak.—Infectious abortion (so called) was first manifested on the ranch, according to facts attainable at that place, about the middle of February, 1892.

To preface the subject, it might be well to state that the malady, whatever its nature, was causing the mares to slip their foals, either by abortion or a premature birth. It was first noticed among the trotters of the Daly ranch, the renowned mare, "Fannie Witherspoon," being the first to abort. The trouble ran riot through his entire stud of most valuable animals, of both thoroughbreds and trotters. The first few abortions caused but little alarm, the owner thinking they were the result of some accident. This being the case, the mares known to have aborted were not regarded as specially dangerous to those still carrying foal, and were consequently allowed to pasture with them. Later, however, alarm was taken, but not until too late, for nearly all the mares in foal had been exposed. The abortion continued until the last of May. Before I reached the locality, the mares were constantly, as they aborted, removed from the ranch, and kept isolated for two or three weeks.

The disease was of an enzootic nature, no animals save those belonging to Mr. Daly being affected. Thus it will be seen that this disease may be comparatively easily controlled, although of an infectious character.

Concomitant with this abortion, a few mares would carry their foals to nearly full term, and then premature births

would occur Several foals lived, and apparently, for a week or ten days, were perfectly healthy, when it would be noticed that the joints of the little fellows were swollen, and there was general dejection.

The possibility that the same cause was in operation in producing the two maladies at once presented itself for consideration. Upon this general supposition, the investigation in regard to abortion was made. The result will be seen in a history of the experiment.

Etiology.—At first, the trouble was supposed to be caused by the food on which the animals were fed. Investigations were made, but no agents likely to cause abortion were found. These investigations were made by botanists and men thoroughly capable of doing such work. They were employed by Mr. Daly, who has been extremely anxious to fathom the trouble, and has used all available means to do the same. He has spared no expense, and too much credit cannot be given him for his kindly and generous aid to science in fathoming the cause of this malady.

Prior to this, however, it was supposed that the animals might be aborting from sympathy; then it was that those having aborted were immediately separated from the mares in foal. Mares and cows frequently abort through sympathy it seems, and no infection exists. Upon arrival and prior to it, indeed,* infectious abortion was suspected, and the investigation was begun with that idea in mind. Having arrived late in the foaling season, few mares were left to foal. This, however, was not a great disadvantage, for a few days after arrival a sorrel mare, Biddy Mac, running on a mountain range, gave birth to a foal, which, as far as external appearances were concerned, was perfectly healthy, except that it was extremely weak. Being very young, however, no trouble was anticipated from this cause. In all these cases the fœtal membrane was always abnormal in appearance.

***Dr. Halloway, State Veterinarian, had secured the services of Dr. Paul Paquin for Mr. Daly, and they had made researches which led them to conclude that it was infectious abortion. Later, Dr. Paul Evans was secured to continue the investigation begun by the former. His work, not yet published, conforms to the views of Paquin and Halloway.**

Appearance of Membranes when Found.—The membrane of this particular case when found in the morning after the labor (upon a hill-top), and a close and minute examination made, revealed the following facts: That portion of the membranes accompanying the horns of the uterus, was found to be undergoing decomposition, having a deep red, congested appearance, this followed by a leaden greyish color later, and exhaling a very sanious odor. Small patches of the membranes were entirely destroyed, and small quantities of a muco-purulent matter were to be found. From these membranes, septic material was obtained for future use for experimental purposes. The method will be found hereafter in "History of Experiment and Result so far as Ascertained," the direct operating cause being a microscopical parasite, with its classification not yet definitely determined; the life-history of the parasite, and its habits are yet also to be determined.

Symptoms.—In this trouble—infectious abortion—no symptoms save those premonitory signs, as a possible uneasiness noticed in simple abortion, are noticed, and most frequently nothing at all is to be seen. However, in the joint affection, due to the same organism which caused abortion, as shown by investigation hereafter noted, affecting the foal which lived, the following symptoms were noticed: About a week or ten days after the birth of the foal there was a swollen condition of some of the joints of the limbs. These increased in size, and became very painful. They often ruptured, and a muco-purulent discharge escaped. Usually, however, there was no rupture, but a continuous distention of the synovial sac. Upon manipulation, these swellings were found very tense and feverish, the little fellows, with a most dejected look, stood or reclined alternately, moving around very little, on account of the extreme pain caused by any motion whatever. A severe synovitis, at times partaking of a suppurative character, was established, and upon post-mortem examination the entire epithysis would be found denuded of cartilage, so severe had been the suppurative action. The appetite seemed tolerably fair in most cases, yet there was

no thriving, the hair looked dead and rough, the animal itself having little life and scarcely any vitality.

Course and Determination.—The mares, after inoculation, abort in about fifteen to twenty days. The foals born alive from inoculated mares invariably die, though some live for two or three months.

Treatment-prophylactic. — In regard to the treatment of mares having aborted, the following measures should be followed:

1. If the mare aborted in an open paddock or pasture, the fœtus and fœtal membranes should be burned, and the mare taken to a stable or small lot where she can be easily treated.

2. If the mare is removed to a stable, it must be apart from any other stable containing pregnant animals, and must not be on high ground, the urine of which will run into lots, paddock, or field occupied by pregnant animals; if removed to a small lot, the lot must be low or situated in such a place that no pregnant animals will by drainage be exposed to the germs causing the trouble.

3. (This third measure is only necessary in mares that have aborted and are not doing well). The external parts should be thoroughly cleansed with a solution of hydrargyrum bichloride (corrosive sublimate), 1 part to 1,000 parts of water. The tail itself should be thoroughly washed with the same, or if in fly-time, a solution of carbolic acid may be supplemented to the corrosive sublimate, of the strength of one part of acid to 100 parts of water. This having been done, the vagina and uterus should be thoroughly cleansed with injections of pure tepid water. After this, use the solution above mentioned for injections per vagina. Continue these injections once a day for two or three days.

4. The attendant treating mares should thoroughly disinfect his hands, and if possible change his clothing before he goes into the presence of pregnant animals.

5. The mares after two or three weeks of treatment may be allowed to the stallion with safety,

6. The foals affected with joint-ail (it being the same disease differently manifested and capable of producing abortion) should be destroyed, and their carcasses burned.

7. If, however, the foal is suffered to live, it should be separated from pregnant animals before any of the swellings exhibit suppuration or sores.

8. A mare, the dam of a foal suffering from the joint-ail, should undergo the same antiseptic treatment as though she had aborted, providing she is not doing well.

9. Mares that have aborted and done well should not be allowed to stallion sooner than two or three weeks after the accident.

History of Experiment and Result so far as Ascertained.—A few days after arriving at the ranch, June 25th, "Biddy Mac," a trotting brood mare, gave birth to a foal. This foal, previously mentioned, was very weak, and died from starvation in two days after its birth. A post-mortem examination was held, but nothing could be found sufficient to cause death. The udder of the dam was then examined, and no milk found. Cultures were made from the blood and several of the glands of the colt, to see if they might possibly contain any of the germs causing the trouble. It is not intended to give the results in detail, as many of the minute points were only tedious and of no practical value to the general public.

Cultures were made from the diseased fœtal membranes from "Biddy Mac," and inoculation made therefrom. One bay mare in foal received the inoculation on June 6th, and on the following night she foaled. On June 29th, the foal showed signs of joint trouble in right knee, and on July 1st the hock joint was as large as a man's head. Thus, from this experiment almost just begun, we might say, do we produce the disease in a colt that when born was apparently in health, and that, too, after the inoculation had only been introduced a few hours.

Another mare, a dun, inoculated with a culture from the blood of Biddy Mac's colt on the 20th day of June, gave birth to a dead foal. This was an abortion, as evinced by the diseased placenta. Hence we see that from these two inoculations with culture we have produced both the diseases, abortion and joint trouble. The germs causing these two diseases are the same, as shown under the microscope. That

these two maladies are one and the same disease differently manifested, there is no doubt.

Other and more varied experiments were tried, and are still in progress, concerning other matters with reference to the possible nature of the malady in regard to immunity and length of incubation after natural exposure. The investigation in these lines is not yet consummated, and much time and attentive work must be done ere the public receive any further statements.

From the foregoing it will be seen that antiseptic measures in the way of washes, etc., in treating mares that have aborted, are not sufficient, and perhaps of doubtful benefit, the germ causing the malady being in the system and not a local parasite; that strict sanitary measures are necessary; that medicinal treatment, of whatever nature, will be of no benefit so far as removing the cause or preventing the accident is concerned; that joint-ail and abortion are the same malady differently manifested; that local application to umbilicus of a recently born foal whose dam has been infected previous to foaling, will not prevent the occurrence of joint-ail in colts.

The following facts may be determined by experimentation: Whether one attack gives immunity to another the succeeding year; whether we will or will not be able to vaccinate against its appearance; what is the length of time required for incubation under natural or accidental exposure; whether or not the germ is capable of producing abortion save at certain stages in its life; and what is the length of time during which the germ remains in the animal economy.

REPORTS OF CASES.

"Careful observation makes a skillful practitioner, but his skill dies with him. By recording his observations he adds to the knowledge of his profession, and assists by his facts in building up the solid edifice of pathological science."—VETERINARY RECORD.

A CASE OF VETERINARY JURISPRUDENCE.

Reported by JAMES A. WAUGH, V.S., Allegheny, Pa.

The case of W. A. Hatfield *versus* J. E. Duncan, V.S., and J. H. O'Brien, M.D., V.S., was tried May 16th and 17th, 1893, before Judge Magee in Common Pleas Court No. 2, of

Allegheny Co., Pa. It was an action to recover two hundred dollars damages for the death of a standard bred and registered mare which died while anesthetized for neurotomy. Attorney T. M. Marshall, Jr., represented the plaintiff, who appeared with a civil engineer and two grooms as witnesses who were present at the operation. Chas. A. Spicer, V.S., and Jas. A. Waugh, V.S., gave expert testimony in behalf of the plaintiff. Attorney T. T. Donahue appeared for the defense, and H. F. Doris, D.V.S., J. C. McNeil, V.M.D., J. A. Holden, V.S., and R. H. Gilliford, M.D., testified; also the defendants and a few other witnesses. The evidence adduced was somewhat contradictory, but proved that hobbles were placed on the mare's feet, chloroform administered on a sponge in a cloth shirt-sleeve tied at one end and drawn tightly over the nose, and the hobble rope was drawn and the animal cast and secured in a box-stall as soon as the anesthetic caused excitement. There were no air-holes in this improvised nose-bag. Eight ounces of chloroform was used, and one side of one front limb was neurotomized; then the owner became alarmed and asserted the patient was dying, but the operators claimed that they needed more chloroform to complete the operation on both fore limbs. Four ounces of chloroform was obtained without delay, but was not used, as the operators realized the mare was dead. Efforts were made to resuscitate the subject, but proved of no avail. Veterinarians Spicer and Waugh testified that modern methods of local anesthesia were safer and preferable to absolute methods of general anesthesia for neurotomy. Drs. Doris, McNeil and Gilliford testified that chloroform might be used as an anesthetic, but they would not use it in neurotomy. J. A. Holden stated that he had thirty years' experience in veterinary practice, but had never seen chloroform used in any way, and he was not familiar with the action of anesthetics. The defendants claimed that it was proper to use chloroform as an anesthetic in neurotomy, and they operated as they had been taught by Prof. Smith at Ontario Veterinary College, and was approved and practiced by the leading veterinarians in all countries.

It was claimed that the defendants solicited and guaranteed this operation, and were financially responsible for the result. It is regretted that no post-mortem examination was held on the remains of this mare, which was said to have been affected with navicular arthritis in fore feet.

The jury returned a verdict for two hundred dollars in favor of the plaintiff. A motion was made and argued for a new trial, but it was not granted, and the case was duly settled by payment of the damages.

PELVIC TUMOR IN DOG.

By C. Clayton, D.V.S., House Surgeon to the American Veterinary Hospital.

A large liver-and-white retriever dog was brought to the hospital May 6th, with the following history:

About four months ago the owner had noticed a swelling on the back of right hind leg, which had gradually increased in size. A medical student had lanced it, and there escaped about a quart of clear fluid with no decrease in size. Of late the animal had suffered with constipation and a slight loss of power in hind extremities.

Upon examination a growth about the size of a billiard ball was found situated between rectum and ischial tuberosity, it was hard and felt like a fibrous tumor, and a diagnosis was made accordingly, and owner advised to have it removed.

On May 12th the dog returned to be operated upon, having been previously prepared for the operation. The animal was secured, the hair clipped from the part and the skin thoroughly washed with bi-chloride 1-1000, all instruments having been previously sterilized.

An incision of about two inches was then made over the most prominent part, and it was found that the growth extended within the pelvic cavity, was surrounded by an abundant growth of cellular tissue, and pressing upon the rectum, thus accounting to some extent for the constipation and partial loss of power.

The growth of cellular tissue surrounding it was dissected off with scissors and scalpel, and the growth exposed; it was

then removed with scissors, and the artery supplying it ligated. When the base was severed, which was attached to the neck of bladder, unfortunately an incision was made into the bladder, and about a quart of urine escaped. This incision was sewed by two interrupted sutures taken very close together, and then the whole ligated. There was a profuse capillary hemorrhage. The wound was washed and absorbent cotton placed in the cavity, and the incision closed with interrupted catgut sutures, and an oakum pad and bandage placed over all. That night the patient seemed bright, but in the morning was somewhat dull, and upon removing the dressing it was found that a great exudation of a plastic nature had taken place, and some of the omentum protruded through the wound; this was washed with bi-chloride 1-2000, as well as the wound, and a bandage applied; from this time on the animal seemed to sink in spite of stimulants, and finally died at 12:45 P. M.

Post mortem revealed nothing abnormal other than what had taken place since the operation, which was a localized peritonitis.

The growth was bi-lobulated, looked very much like a hypertrophied prostate gland. It weighed three ounces and five drachms. When it is sufficiently prepared and opportunity offers itself, it is to be examined under the microscope and its real character discovered.

PEROXYDE OF HYDROGEN.

By E. N. Hutchinson. Odell, Ills.

Dear Sir.—I have just dismissed, as well, a very interesting case of poisoning from using peroxide of hydrogen from a tin vessel. It may be of equal interest to some of my fellow readers of your excellent publication.

About May 25th, a farmer brought a mare to me which had a large swelling upon the lateral surface of the withers. I at first diagnosed it as a simple cyst or hygroma, but upon further examination I concluded that suppuration had set in, and treated it as an abscess, and was rewarded by an abundant flow of pus.

After injecting a little of the peroxide of hydrogen, I sent the mare home with instructions to bathe frequently with cold water and use that same injection, cautioning the owner against using any but a rubber or glass syringe, confidently expecting that the mare would make a nice recovery; but in about a week the owner brought her to me, saying he was afraid he was going to lose her; and she was indeed in a deplorable condition, the whole region of the withers was intensely inflamed and swollen. I was myself at a loss for an explanation of such a state of affairs, and, however, assured him that his horse was in a nowise dangerous condition, telling him to take her back to his stable, and put several folds of a heavy woolen blanket over the inflamed parts and pour three buckets of water over it three times a day. A few days ago I visited the animal and found the swelling and inflammation entirely gone, but a considerable flow of pus through the opening I had made. Wishing to use the peroxide of hydrogen again, I asked him to get what he had and inject some of it, when I discovered that he was in the habit of pouring it out into a *tin cup* and then injecting it into the wound, pouring what he didn't use back into the bottle again. I think that this fully accounts for the former unfavorable action of the medicament.

OSTEO POROSIS.

By C. L. Thudioum.

I send you the following on the successful treatment of a case of osteo porosis by myself, hoping it may prove of some benefit to some of my more fortunate brethren who possess the desirable sheepskin, and I hope shortly to gratify my ambition of having one myself.

In March of last year, while training some race-horses at Gloucester, N. J., I had an old colored trainer come to me to see if I could do anything for a colt which had been given him because it had the bighead. I told him that there was no cure for the disease that I knew of, that there was any certainty in, but that the only thing that seemed to prove in any way beneficial as far as I could learn, was to give him a

change of climate and a run at grass, and an alterative treatment medicinally. But as the colt had cost him nothing, if he was willing to pay for the feed till it either recovered or died, I would like to experiment with the case, as I had an idea that bighead was a sort of cancerous condition, and if we could get at the part first affected, and use some effective caustic, we might cure the disease.

Two days after he brought me the colt, and told me to go ahead and do what I liked with him, and if he died it was his loss. Working on this basis, and finding the following condition to exist, I treated as follows:

The colt, a two-year-old thoroughbred, whose pedigree I have forgotten, was a bay about fifteen hands high, and a stallion. He could hardly breathe from the enlargement of the nasal and superior maxillary bones, and the greatly congested condition of the nasal mucous membrane, and there was a rusty-looking discharge from both nostrils, though the quantity was not of any moment, simply a little trickling; as to his further condition as regards body and extremities, outside of the fact that in this case there existed extreme emaciation, the symptoms were identical with those in Williams' Surgery, except that the only enlargement discernible was that existing in the face, and which will be exactly illustrated to you by a reference to Fig. 31, in the above mentioned work, had the colt died and the head been dissected.

We now took the animal and after thoroughly washing the face over the affected part with a bi-chloride of mercury solution, inserted a seton over the enlargement on each side from the lowest point of the enlargement to directly below the eye, where we brought it out; on the setons we smeared a small quantity of the bin iodide of mercury blister as usually given, one in eight.

This we allowed to remain for twenty-four hours, after which we removed the setons, and replaced them with new tapes after thoroughly cleansing with an antiseptic solution; these new tapes we moved every day for four days, taking care to keep the wound clean and free from accumulations, and then for two weeks, each day after dressing, we dusted

the tapes with dry, powdered arsenic as much as would adhere to them, and drew them up into the wound, with the result that we got a most outrageous enlargement of the head temporarily. At the end of this time we removed the tapes, and washed and dressed the wounds each day till they healed up, and then turned the colt out to pasture, when he at once began to grow and fill out, and is at the present time in training and nearly fit to race; is eating heartily and is doing generally well, and I shall be pleased to show him to any one who may desire to see him. The enlargement of the head still exists, but the breathing is in no way interfered with, and when last I saw him two weeks ago, he was as lusty a looking youngster as I most ever saw. I may as well say that he had been turned out prior to the treatment without any beneficial effect. Taking this in the light of an experiment, which does not prove of course the correctness of my theory, as I have had no further cases up to the present time to try the same course of treatment on, I would ask those who may have the opportunity offered them of doing so, to try the same course of treatment, or something similar, and report the result for the benefit of all.

REVIEW OF BIOLOGY.

SANDWORMS AND TUBERCULOSIS.

By M M. Lortet and Despeignes.

Sandworms may, for several months, store up in various regions of their organisms the baccili of tuberculosis, and bring up to the surface of the ground the microbes, thus infiltrated in their tissues.

The authors have demonstrated by inoculation of the fæcal substances that these lumbricoids deposit upon the surface, that they can bring up from deep ground tuberculous baccilli which had been deposited there. Very deep flower-pots were filled with earth finely sifted. Tuberculous matter was then deeply buried in these pots, and they were placed in deep plates filled with water. The surface of the

earth was covered with a coat of pure white, silicated gravel, and the flower-pots well enveloped with sheets of paper.

In a few days the worms were seen passing their excrements upon the gravelly coating, from which they were gathered, avoiding all surrounding contamination. The inoculation of the excrements to guinea pigs gave rise to the development of well-marked generalized tuberculosis.

Conclusion: Lumbricoids may carry to the surface of the ground, with the products of their digestion, bacilli which are possessed of all their virulent properties.—*Rec. de Med. Vet.*

PHYSIOLOCICAL ACTION OF SPERMINE.

By Al. Pohl.

The author has studied the chemical composition of the Brown-Sequard liquor, and has found, with the albuminoid, lecithine, mecleine and other leucomaines, a sensible proportion of spermine. This last seems to be the active principle of the liquor; it is found in the testicles, the prostate, the ovaries and the pancreas (where it is abundant), in the thyroid body, the thymus gland, the spleen and the normal blood.

Numerous experiments made with pure spermine in the chlorhydrate state by Tarchanoff, Maximowitch, Schicharoff, etc., have proved that this basis possesses a tonifying and dynamogenous action, like that of the testicular fluid of Brown-Sequard.

Spermine is not an oxydizing agent, but it gives rise by its contact to an acceleration of the mineral oxydations, as well as of the physiological. This property of being an excitant of the oxydations explains the phenomena produced by spermine in men as well as in animals. It resists the intra-organic oxydations.

The beneficial action observed in diabetes is also explained by a reduction of the formation of spermine produced by the pancreas in diabetic patients.

The action of spermine as a *tonic* and a *nervine* agent is easily understood from its effect in restoring to the blood its power of carrying oxygen to nervous elements.—*Ibid.*

ACTION OF THE EXTRACT OF BOVINE BLOOD UPON ANIMALS SUFFERING WITH GLANDERS.

By A. Babes.

The following is the mode of extracting the active substance from the blood of bovines:

The blood obtained by bleeding is received into a sterilized balloon, and left alone for several hours at a low temperature. A certain quantity of water is added to it, and then, little by little, zinc powder, the balloon being well shaken. The mixture is then filtered.

The filtered liquid, which is clear and slightly colored, of a greenish brown, is treated with sulphuret of potash, to eliminate the zinc; then undergoes a second filtration and concentration in a vacuum at a temperature of 35° C.

The residue is then dissolved in a mixture of equal parts of sterilized water and glycerine, and the solution is ready for use.

The cutaneous injection of this liquid in doses of occ.25 extract of blood, is followed several hours after by a thermic reaction, very marked in the glanderous guinea-pig, but producing no change in the healthy animals.

Experiments made upon thirteen horses, both healthy and glanderous, have given the same results. Upon the healthy animals, no elevation of temperature; among those which had proved to be glanderous at the post-mortem, a well-marked elevation of temperature, continuing for from six to ten hours following the injection. The author is led by these results to the conclusion that the serum of the blood of bovines, besides the property of revealing the presence of glanders, possesses also a specific therapeutical and inoculative or developing action in that disease.—*Ibid.*

UPON THE TRANSMISSIBILITY OF THE MANGE OF THE CAT AND RABBIT DUE TO THE SARCOPTES MINOR FÜRST.

By M. A. Railliet.

But little was known of the transmissibility of this disease from one species to the other when the author had occasion to study the mange of the rabbit, and to make experiments as

to its ease of transmission. He has done the same thing with the mange of the cat, and has made the following conclusions:

1. It has been impossible to transmit the sarcoptic mange (due to sarcoptes minor) from the rabbit to the rabbit, to the cat, to the rat or to the dog.

2. This affection was easily transmitted from cat to cat.

3. It was transmitted only with great difficulty from the cat to the rabbit, and only after an extremely long period of inoculation. (Five months after cohabitation and three months after the death of the cat).

Rabbits which contracted the disease from cats have given it to rabbits.

For rabbits the degree of contagiosity must then necessarily be very weak.—*Ibid.*

EXPERIMENTAL PATHOLOGY.

THYROIDECTOMY—EFFECTS UPON THE NERVOUS CENTERS.

By T. Capobianco.

Entire thyroidectomy is always followed by death in man and also in dogs, in which when operated on, the temperature diminishes gradually from the moment of the operation until death, though rising somewhat during the convulsive attacks. The histological examination of the central and peripherical nervous system reveals circulatory troubles and peculiar modifications of the nervous element, such as atrophy, granular and vacuolar degeneration with a predominance of one or other of these lesions according to the cases and the parts examined. These alterations are specially precocious in the brain (cerebrum) where they principally assume the atrophic form. Cerebral lesions occupy principally the cells of Puckinje, but are also found in the cortical layer and the dentated body. Among the bulbous nuclei, that of the hypoglossus is most commonly affected, then those of the facial, of the pneumogastric and the others. In the marrow, the lesions are in the gray and white substances, with predominance upon the

anterior gray horn and the crossed pyramidal bands. There the three types of degeneration are found. The spinal roots are the seat of very important lesions of degeneration.—*Revue des Sc. Med.*

TUBERCULIN IN GUINEA-PIGS AND RABBIT INOCULATED WITH TUBERCULOSIS.

By K. Yamagiva.

When tuberculin is injected into animals already inoculated with tuberculosis, after the first or the second week one finds metastatic centers in the lymphatic ganglions, the spleen, the liver and the lungs. Besides this, the spleen contains deposits of pigment. The bacilli are in great number under the same form, and possess the same coloring powder in animals simply inoculated with tuberculin, or those which have previously been inoculated with tuberculosis.

And again, the injection of tuberculin does not protect an animal from ulterior infection of its organs when he is inoculated subsequently with the tuberculous bacillus. When a guinea-pig is inoculated with the bacilli of a metastatic center from the lung of a rabbit treated by tuberculin, the bacilli continue to develop and grow in the inoculated guinea-pig.—*Ibid.*

ACTION OF BOVINE BLOOD SERUM ON THE VIRUS OF GLANDERS, AND ITS CURATIVE POWER IN EXPERIMENTAL GLANDERS OF GUINEA-PIGS.

By P. N. Chenot and J. Picq.

Conclusions of the Experiment. — 1st. The bovine blood serum possesses a bactericide property on the virus of glanders. 2d. Animals infected with equine virus, and treated with the serum before and after glanderous inoculation, recover seven times out of ten. 3d. Animals condemned to a fatal and rapid end by the excessive virulency of cultures resulting from successive generation in the guinea-pig, have survived from twenty-one to forty-two days, while witnesses died in five days. 4th. Post-mortems of animals considered during life as recovered have shown evident alterations of

tissue (sclerosis and calcification) which are proofs of their recovery. Recovery from a first attack does not confer absolute immunity.—*Ibid.*

INOCULATION OF GLANDERS IN NERVOUS CENTERS.

By TEDESCHI.

Animals very susceptible to glanders (as cats, guinea-pigs and rabbits) die more rapidly when the inoculation has been made in the nervous centers than when performed in any other region. Death is due to general infection.

Animals having a complete immunity (rats) or a partial one (dogs) die also very rapidly by this mode of inoculation. The virulency of the microbes obtained in the nervous centers of animals thus inoculated is greater, and especially if these bacilli are taken from animals refractory to glanders, but that have died of inoculation. This exaggeration of virulency, positive for the microbes taken directly from the exudates of the cadaver, persists in the cultures to such a point that they are capable of killing with subcutaneous injections animals that are naturally refractory to glanders.

In all these cases generalized lesions are found in all the organs—congestions, necroses, disseminated miliary granulations of glanders.—*Ibid.*

EXTRACTS FROM GERMAN JOURNALS.

By RICHARD MIDDLETON, D.V.S., Philadelphia, Pa.

PERIODIC OPHTHALMIA.

This article respects cases in large stables, and relates to those which occurred in the tenth Ulanen regiment in Zullechau. At this place, after the return from practice maneuver, three horses became sick of a disease affecting the interior of the optic globe; in March, April and May of the next year many other individuals in the same military company were afflicted with the same disease, which also recurred in the three original cases. This left no doubt as to the nature of the malady, and an exhaustive investigation of the conditions surrounding the animals in this particular barracks was insti-

tuted. The horses had been quartered in the stables, whose floor was somewhat damp, for ten years, but up to the present time no deleterious effects were noticed. This was divided into three portions. During the period included between 1882 and 1892, only nine cases of periodic ophthalmia had occurred in the whole regiment.

Examination of all the animals of this company revealed numerous alterations of varied pathological importance, embracing opacity of the lens, nuclear cataract, adhesion of the iris and capsule.

Fifteen individuals of various ages were attacked since autumn; in all cases the first symptom was indicated by photophobia, which lasted eight to twenty-one days; with one exception the disease began in one eye. Recurrence of the disease took place in from ten to twenty-eight days, but in those animals becoming afflicted in the autumn not until six months after the primary appearance.

The facts as given undoubtedly permit the conclusion that the interior structure of the eye was the seat of an insidious inflammatory process. The younger horses were uniformly exempt from the affection. The cause, whatever it may have been, had commenced its encroachment upon the stock in 1891 and 1892.

Schwarznecker examined the local drinking water furnished the horses, using Willach's and his own method, and discovered therein evidence of vegetable and infusorial life, together with a species of minute round worms.

The contents of one patient's eye proved nothing. Later, another one of the horses was killed, but the search of the aqueous and vitreous humors yielded negative results. In another case, however, examined post-mortem, three examples of a small, round worm were discovered in the vitreous humor (species described by Willach), together with an egg-shaped formation of double contour and cellular contents in the aqueous humor. (Upon this single section and record we cannot presume to draw conclusions.) This but agrees with the observations made in Saarburg* upon the unusual contagion of

* Berl. Thier. Woch. No. 33, 1892.

ophthalmia, to wit, that in epizootics of periodic inflammation of the eye, the progress of the disease is necessarily abetted by the presence of some influence indigenous to the locality in which it appears.

The breed of horse has also its predisposing, or rather its supplementary, effect when other conditions are present; for instance, the horses of east Prussia are more amenable to the affection than those of the western part of the kingdom.—*Zstchr. f. Vet. K.*

TETANUS IN CATTLE.

A cow having retained the afterbirth, and which had been treated by an empiric, was examined by Hock, and found to have tetanus. The same had started as a trismus, and gradually invested the whole muscular fabric of the anatomy. Chloroform inhalations were futile, and the patient was destroyed.

Klockenberger saw, after a lengthy retention of the membranes, which induced a second metritis, a case of trismus and subsequent tetanus. The cow died after an illness of two days. District Veterinarian Haertle has seen tetanus appear in three days after the application of ligatures to several tumors, some of which approached a child's head in dimensions. Lieble saw the disease present in a calf having gangrenous fistula of the umbilicus; upon thorough disinfection of the cord the animal recovered.

Steuert also reports tetanus, which had been mistaken for puerperal eclampsia, following an easy and normal parturition. As a result of wounds induced by manipulation in delivery, Frank Speyer saw two cases of tetanus in cows.—*B. T. W.*

ACTINOMYCOSIS OF TONGUE IN EQUIDÆ.

Since its discovery in cattle, the actinomyces bovis has been assigned as the cause of certain well-defined swellings in swine, dog, horse and man. Especially abundant have the recorded cases become in the last decade, owing, no doubt, to a more perfect and stringent method of meat inspection.

These neoplasms, while abundant in animals of the slaughter houses, but seldom come before the attention of the profession as factors in equine pathology. T. has had occasion to treat a glossitis in the horse, which was directly due to an infection of this micro-organism. A half-blooded gelding ten years of age, the property of a farmer, had manifested difficulty in prehension and mastication for some time, and was further inconvenienced by a profuse salivation. An empiric had removed the apices of the molar teeth as being the cause of the complaint.

Our local examinations exposed an inflammation of the tongue, especially at the point where it was swollen, hard stiff and painful. Upon the superior surface of the organ, and about three inches from the anterior contour, five small swellings, each the size of a bean, were noticeable; the tissue adjacent to these was deeply reddened. The veins upon the lateral surfaces were congested and varicose. A fistula had formed by the confluence of two of the tumors, and by pressure a caseous discharge flowed from the tract. This latter was composed of many granules, which by the microscrope exhibited the characteristic features of the actinomyces.

In each of the tumors T. made a deep incision which he daily pencilled with iodine tincture. Internally, the patient received ʒiv of potassium iodide daily in a bottle of water. After twenty days the swellings and the symptoms which they induced had disappeared.—*Berlin Thier. Woch.*

SPERMA IN VARIOUS GLANDS—BROWN-SEQUARD'S PANACEA.

Brown-Sequard found in the testicle secretion an agent capable of inducing nervous activity in all its diversified complications;* his discovery has been wrongly used, and considered as an aphrodisiac only. The ancients knew the medicinal worth of the testicle product; the Gallic preparations of the castoreum and musk sack were known as stimulating agents—one of the constituents of the latter is the material under consideration. Brown-Sequard injected a watery

* Berlin Thier. Woch., 1892, p. 584.

emulsion obtained by trituration of the testicles of freshly killed animals.

Poehl distinguishes the sperma as the active principle of this emulsion. Experiments by Prof. Tarchanoff have developed the fact that in man and animals alike sperma acts as a tonic, spending itself upon the nervous organism.

Respecting the occurrence of the sperma, it may be stated that not alone is it the exclusive product of the male animal, as was earlier supposed, but also of the opposite sex, being secured from various glands and organs of both sexes; it is a normal constituent of the female.

Naturally the greatest amount of sperma is secured from the testicles, following which, in the order named we have the prostate gland, pancreas, spleen, thyroid glands and lastly, as containing the least amount of the fluid, come the ovaries. H. believes that sperma circulates in the general system.

Vasalle has obviated the cachexia strumipriva, when caused by extirpation of the thyroids, by injections of the secretions of these glands. The operation in this case being evidently dependent upon the sperma contained therein.

Young dogs and guinea-pigs which receive daily injections of 0.02 g. of sperma for several months, become more developed and bulky than control animals of the same species.

Prof. Minkowski has observed diabetes, due to removal of the pancreas, to disappear upon inserting a particle of this same gland under the tegument; this is also to be referred to the excessive spermin capacity of the organ. There have been numerous instances recorded in which the sperma injections have operated beneficially upon diabetic patients, even causing a total suspension of the saccharine material in the urine.

Concerning the application of a watery extract of the various organs, as a medicinal agent, Brown-Sequard and d'Arsonval say the following: "All animal tissues may and will be applied, with the lapse of time, as medicinal agents; in this particular direction we see the foundation of a new therapy, whose constitutents are obtained or extracted from the physiological products of the animal body."

Since the injection of watery infusion is not unattended

with certain palpable dangers, Poehl urges isolation of the essential element of the sperma, and experiments upon the action of the same.—*Deutsche Medicinal-Ztg.*

OSTEOMYELITIS SUPPURATIVA.

Prof. Jansen, Tokio.

From ancient times, in Japan, the appearance of rare animals of a white color, especially albinos, has been held to presage a reign of happiness and prosperity to the ruling emperor.

A small white bear being found upon the Isle of Yeso by a native Aino, was in pursuance of the legend just related, presented to the emperor, who in turn transferred the young cub to the imperial zoological garden in Tokio to be nurtured.

That the animal was unhealthy soon became apparent, the affection progressing from the previous October to the middle of March, at which date the author attended the same at the emperor's command.

Status Praesens.—The patient, a male of medium size and somewhat over a year old, was covered with white hair, had a white skin, claws, nose and eyes devoid of pigment. The iris appeared red and the pupil reflex, of a yellow-red color.

The mouth is continually open, and the jaws may not be brought in apposition, a space of one and a half inches separating them; the molar teeth of the upper and lower jaws do not come in contact; saliva flows uninterrupted from the mouth at all times.

By a closer examination we found the intermaxillary bones in their whole contour, as also the superior and inferior maxillary bones in their anterior portion, enormously hypertrophied, to the extent of five times their normal proportions.

The enlargement is mainly in the middle section of the bones named, which disposition permits the formation of deep grooves or interstices between the localized swellings which in themselves are about the size of an egg.

The mucous membrane covering the stomatic portion of the left intermaxillary bone was destitute of epithelium, and in its center necrotic. On the enlargements, fluctuation

could be discerned ; incisors, and especially the eye teeth, were loose, the latter admitting of extensive movement. The posterior portion of the mouth and the tongue were normal and in no way involved. The voluntary and free prehension of liquid or solid food was impossible ; but deglutition, when the liquid food was brought well back in the fauces, was readily accomplished.

The general health, beyond that we have cited, was unimpaired by the local lesions. A diagnosis was made of suppurative inflammation of the medulla—an osteomyelitis involving the ossa supra, infra and inter-maxillaria.

Therapy consisted of incisions in the fluctuating centers, which yielded five ounces of pus, daily cleansing with a collutorium composed of creolin solution. Internal treatment commenced by calcium phosphate, and later displaced by ol. morrhuæ and phosphorus. A strong diet of bouillon and eggs, or milk, was administered by means of a tube.

The condition of the animal gradually bettered, so that in four weeks the jaws could come in contact and be utilized by the owner in masticating soft food.—*Wochenschrift.*

JABOT IN CANIDÆ.

After an exhaustive observation upon the aetiological and chirurgical character of this case, the author communicates the same in all its details.

The patient had received a bite in the lower portion of the inferior cervical region. Externally nothing could be noticed but the slight puncture from the canine teeth of the other animal ; great pain was evinced and the location was considerably swollen. Anorexia and great weakness.

The owner applied cataplasms, with the idea of softening the swelling, but the general health of the dog continued to decline. Ten days from that on which the wound was received, the enlargement had increased to the size of the doubled hands, and a deeply-seated fluctuation could be distinguished. Temperature 105° F.

Following the incision there escaped two gills of a foul-smelling pus. The examination of the abscess cavity per-

mitted one to come in contact with the trachea, carotid artery and œsophagus.

Microscopic scrutiny of the contents revealed the bacterium terms, staphylococcus pyogenes, staphylococcus aureus and albus. Treatment consisted of careful irrigation of the cavity, drying with tents soaked in iodoform ether, and insufflation of iodoform. Healing followed.

At the termination of a half year a relapse again brought the dog to my care. The symptoms at this time were accelerated heart action, dyspnœa and vomiting. The seat of the former wound upon the left side of the neck was now occupied by a cicatrix and slight swelling, the latter not of a painful character.

On account of the progressive weakness and inanition the dog was killed.

Post-mortem exhibited, upon the under side of the œsophagus, towards the median line and directly anterior to the curvature made by its entrance into the thoracic, a tumor the size of one's fist. This formation had contracted adhesions with the trachea, carotid and adjacent muscles; it was in intimate union, however, with the gullet.

The natural grey color was seen with difficulty, due to the escape of a dark brownish liquid through one of several openings.

After pressing considerable of this material from the swelling, food particles remained in a compact mass behind. The cavity was a veritable diverticulum of the œsophagus—a jabot—with which it communicated by means of a half inch aperture. At the point of communication the calibre of the gullet was smaller.—*Schweizer Archiv. fur Thier. K.*

EXTRACTS FROM ENGLISH JOURNALS.

SUPERFLUOUS MALFORMATION.

By W. Williams, M.R.C.V.S., Llandilo, South Wales.

On January 28th of this year I was asked to examine a gentleman's hunter, about fifteen years old, on account of a hard swelling which suddenly appeared on the near side of

the neck, some five inches behind the posterior border of the parotid gland, just above the jugular, about the size of a goose's egg, and painless upon manipulation. This continued very much the same for about a fortnight, apparently causing no inconvenience, when the swelling in the course of one night increased to three or four times its original size, causing difficulty in breathing and total inability to swallow.

In spite of everything that was tried the swelling rapidly extended in all directions (including the lips) with a very well defined border toward the mane and chest. There was no fever until within three days of his death, when the pressure on the blood vessels became so great as to obstruct the circulation on that side. At times there were severe fits of coughing followed by discharges of foul-smelling pus from near nostril.

About twelve months ago an enlargement something similar to this appeared a little nearer the posterior border of the gland; this gave rise to fits of coughing with simultaneous disappearance of the swelling, followed by a foul discharge from the same nostril. This slight enlargement appeared several times during the twelfth month with the same result.

Post-mortem.—On the 18th of February the horse died, and I found on opening this tumor that it contained impacted food, oats and bran, about a pound in weight, enclosed in a dilated end of a tube. This tube was about four inches long before reaching the dilated end with the mass of food, and macroscopically identical with the œsophagus, which was at its side to the right. Their respective openings into the pharynx were side by side, the only difference between them was that the superfluous opening was a shade smaller.—*Vet. Rec.*

TRAUMATIC CARDIAC DISEASE.

By Eaton Jones, M.R.C.V.S., Liverpool.

A short time ago a draught mare was brought to our yard having just received a wound which pierced the pectoral muscles for some depth, and caused by collision with the shaft of a trap. The wound at the time did not appear dangerous at all, and for a week did not affect the mare, who did

not go off her food, the pulse and temperature keeping about normal; the wound being dressed with antiseptic and healing lotions, and only discharging a very little.

After that time the discharge increased, and the mare began to go off her food, the pulse became irregular and the temperature varying, sometimes being nearly normal and then rising to 103-4°. In about three weeks from the time of the accident the mare refused all food, the pulse became very irregular, and the temperature kept to about 103-4°. She also began to purge very badly, and the discharge from the wound increased enormously, the respirations were short and hurried, and confined to the abdominal region—the mare exhibiting every sign of pleurisy or hydrothorax. The ordinary remedies were used, and the mare fed chiefly on milk, but she gradually grew weaker, and died about five weeks after the accident.

A post-mortem examination exhibited most interesting appearances, the shaft had pierced the thoracic cavity, entering it between the second and third ribs and just touching the pericardial sac. The plenrisy was confined only to that part of the thoracic cavity pierced by the shaft, and a very small amount of serum found in it. The pericardial sac, however, showed most peculiar appearances; upon being opened quite *two gallons* of fluid escaped, and around the heart a coagulation of lymph had taken place covering both auricles and ventricles, being over an inch thick and studded all over with little pyramids, both being of a bright yellow color. As I had never seen or heard of anything similar before, I thought it might be of interest to your readers, and would be glad if you would insert it in your paper.—*Ibid.*

BIBLIOGRAPHY.

PROCEEDINGS OF THE UNITED STATES VETERINARY MEDICAL ASSOCIATION—SESSIONS 1891-92. Edited by W. HORACE HOSKINS.

For the last twenty-nine years this national body of veterinarians has been holding yearly and semi-yearly meetings, ostensibly for the advancement of their profession. But it rather seems that the work which has been accomplished at

these meetings has been somewhat of a selfish and exclusive character, contemplating, more than any other object, the benefit of those who were in attendance, unless, indeed, it was sheer and excessive modesty which has prevented their periodical transactions from finding their way outside of the meeting-halls and the banqueting-rooms of the cities where the meetings have been held. And probably this state of things would have continued for years to come, as it had already been perpetuated from the date of the organization in 1863, had it not been for the energy of one of its members, who for the last few years has filled the ungrateful position of secretary of the Association. Dr. W. H. Hoskins in this, which we hope for his own sake will be the last year of his secretaryship, will leave, when he resigns his office, not only a record that few men will successfully undertake to break, but has presented to the profession and to the public at large a book which will remain forever a monument to his professional lore, to his enthusiasm for the promotion of the National Association, as well as to his devotion to whatever pertains to the elevation of American veterinary science.

In editing the proceedings of the last two meetings, though directed to do so as Chairman of the Committee on Publication, and on assuming and performing the entire work, we dare to say single-handed, Dr. Hoskins has not only collated the materials furnished at the meetings and arranged the papers read in their proper order, but has also supplemented the discussions following. Whether reports of committees, or motions, or amendments, nothing has been omitted, and if the readers of our veterinary journals remember all that they have seen in these periodicals, there is still something that can be found in the *Proceedings*, something of unusual value in records which carry us back twenty-nine years to the day when the Association was born in 1863. The book begins almost at the first page with a list of the presidents and officers from the beginning, and this is followed by lists of the entire number of members who have joined the ranks of the Association from 1863 to 1893. The honorary list comes next, where the celebrated names of our profession, both at home

and abroad, are found, and then we have the necrology of our deceased brethren. The constitution and by-laws complete this introduction to the book, which is followed by the minutes of the last two meetings.

All in all, it is a valuable contribution to the history of our profession in this country, and forms an intrinsic addition to our veterinary literature, and we sincerely feel that we only express the feelings of all veterinarians in the land in not only tendering to Dr. Hoskins their compliments for his work, but also their thanks for the manner in which he has accomplished his task.

HORSES—SOUND AND UNSOUND. By J. IRVINE LUPTON, F.R.C.V.S. (Balliere, Tindall & Cox, London).

We have been so intimately connected with the subject treated in this book, and have so often had occasion to deplore the state of our literature on this important topic, that when we received the work of Mr. Lupton we laid aside all other readings to examine it. And must we acknowledge the fact that when we got through reading it we felt disappointed? Why? Not because it is not well written, or of smooth reading, nor because the subject is not well treated or presented to the reader. Far from it. The descriptions in each chapter are good, the diseases which one must consider as constituting unsoundness are well described, everything is well said, and the book is worthy of the attention of all veterinarians. But we felt disappointed because we did not find in "Horses—Sound and Unsound" that which we would have been glad to find in it, viz., a criticism on our laws relating to the subject, and a suggestion of needed improvements.

Our position in respect to the law of warranty is already pretty well known, and we have already on former occasions before the United States Veterinary Medical Association expressed our views upon what we consider an erroneous method of procedure. We have, however, found in Lupton only that which we have read in others, Oliphant, Hanover, etc., and probably better presented, but all only the same

thing. And if we are not mistaken, we are no better advanced in our means of deciding clearly and positively where soundness ends and unsoundness begins.

Almost the first hundred pages are devoted to the subject of soundness; then comes a chapter on horse sales and warranty, and this is followed by the act referring to contagious diseases in animals. The balance of the book relates to the subject of prevention of cruelty to animals, with the various laws and amendments upon the subject.

Altogether, "Horses — Sound and Unsound" contains lots of useful information, and whether it is the veterinarian, the layman, or the members of the Society for Prevention of Cruelty to Animals, every one will enjoy its reading as a book which is presented by the well known house of Balliere, Tindall & Cox—a sufficient voucher for its value.

PRECIS DE L'INSPECTION DES VIANDES. (Treatise upon the Inspection of Meats). By L. PAUTET. Asselin & Houzeau, Paris.

In this excellent book of three hundred and sixty-four pages, the author treats this subject in the most thorough and practical manner. After an introduction upon the necessity of proper and honest meat inspection, he gives the reader the various laws relating to the matter, and after giving a few pages to considerations concerning age, breeds and general conditions of health and disease in the various animals used for butchery purposes, with a short chapter on slaughter-houses, slaughtering, the dressing of meat, etc., he devotes a short chapter to the differential characters of the various meats, and their preparation and division by quarters. He then considers the alterations occurring in meat under atmospheric influences, and the process of preservation. The last chapters treat of the flesh obtained from animals suffering with parasitic diseases of a microbic or non-microbic nature, as well as of that of animals affected with other classes of disease, such as actinomycosis, phosphorescent meat, leucocythemia, etc., all possessing for the inspector some points of special interest. The meat of the animals sold by the butcher proper, such as that of steers, cows, calves and sheep, is not

only considered, but in chapter XII that of swine, game animals, birds, venison, and even fish, receives due attention. The book is well illustrated with ninety wood cuts of great value.

The "Precis de l'Inspection des Viandes" is an excellent work which our colleagues familiar with the French language will do well to consult. English literature on the subject is rather deficient, and a translation of this "Precis" would be of great benefit to those who are engaged in this specialty—comparatively a new study in this country.

SOCIETY MEETINGS.

MEETING OF THE COMITIA MINORA, INTERNATIONAL COMMITTEE, AND OTHER COMMITTEES OF THE UNITED STATES VETERINARY MEDICAL ASSOCIATION.

The meeting was held in the office of Dr. Huidekoper at 129 West 52d St., New York, May 20th, 1893, and was attended by the following members: A. W. Clement, of Baltimore, Vice-President; James L. Robertson, of New York, Treasurer; W. Horace Hoskins, Secretary; Leonard Pearson, Philadelphia, A. Liautard, New York. R. A. McLean, of Brooklyn, as a guest.

The Secretary called for report of the International Committee, who asked a delay of half an hour for preparation of same. The Secretary then read the following communication from the President, Dr. Williams:

PURDUE UNIVERSITY,
LAFAYETTE, IND., May 17th, '93.

Dr. W. Horace Hoskins, Sec'y U. S. V. M. A.

DEAR DOCTOR:—Your notice of May 12th of meeting of committees of the United States Veterinary Medical Association at New York City on the 20th inst., to complete arrangements for International Meeting, duly at hand and noted.

I regret very much that my duties here forbid my attending, but I trust Dr. Clement will be present to act in my stead, and will cheerfully abide by the action taken by the

International Committee or the Comitia Minora. I have little to suggest that is new.

The local arrangements at Chicago will be all right, and I shall be in Chicago within four to six weeks and complete the details as far as practicable at that date.

The dates to be assigned us for public mass meeting have not yet been decided upon, neither have the speakers, nor any one of them for this part.

Of these we should have five or six addresses twenty or thirty minutes long, and I suggest that the speakers be largely from foreign countries, possibly two from the United States and Canada, the others from England and continental Europe. All must, of course, be able to speak English, and make their addresses in our language.

I think Professors McEachran and Smith should be provided with or offered places on programme. Can they not have places on Veterinary Education?

As subjects for addresses in mass meeting I would respectfully suggest:

1. History of Veterinary Science.
2. Veterinary Science and National Economics.
3. Veterinary Science and National Health.
4. Veterinary Science in Relation to Ethics.
5.
6.

Will leave some blanks; possibly those already suggested will be deemed unsatisfactory.

These topics should be settled at once, and proper persons for presenting them named, with alternates where practicable.

The Committee on Honorary Members will doubtless submit a satisfactory report, and in making list of foreign veterinary associations and colleges I have little to suggest or knowledge to impart, but let me suggest for one thing that we try if possible to have representatives from Central and South America.

I have accepted a paper from Dr. M. H. Reynolds, Keosauga, Iowa, on "Fistulæ" which comprises considerable work, and promises to be interesting.

Permit me to suggest that the matter of programme, its arrangement, etc., be well discussed, suggestions made as to general outline, and the details then committed to the judgment of a small committee to carry out the recommendations as far as practicable.

We can have all the hall room we wish, and in case the major subjects already fixed upon by the Association will require the full time of the meeting, I suggest that subordinate, or rather branch meetings be held for the consideration of other topics, to allow veterinarians to choose between two programmes, and attend the one of most interest. Some veterinarians may not care to hear discussions on our major subjects. The details of such arrangements I would leave with Programme Committee. I have no further papers under consideration.

Any appointments which need immediate attention please refer to Dr. Clement, or in case the appointment should come from the International Committee, then, of course, to Dr. Huidekoper.

This is all which now occurs to me, and should I have anything to add, will address you at New York, care of Dr. Liautard, either by telegraph or post.

Have written Mr. Bonney on several matters which I trust will be answered in time to lay the information before the meeting.

Wishing a successful meeting, and regretting my inability to be with you in person, I am

Very truly yours,

W. L. WILLIAMS.

The Secretary then read a letter from Dr. C. P. Lyman, of Boston.

HARVARD UNIVERSITY,
BOSTON, MASS., May 15th, '93.

W. H. Hoskins, D.V.S., 12 South 37th St.

MY DEAR DOCTOR:—Your favor of May 11th is received. I am sorry to say that I shall not be able to be present in New York on the 20th inst. As being the one appointed by the Comitia Minora at their last meeting in New York to see what could be done toward obtaining a national charter for

our Association, I have to report the receipt of the following letter from Washington, dated February 11th, 1893, and signed by one of the United States Senators:

"It is now too late in the session to do anything with any new bill in this Congress, but if you have an act of incorporation drawn I think there will be no difficulty in getting it through Congress at next session. These bills are usually passed without objection. Any good lawyer could draw it for you."

I should like to be further instructed by the committee as to whether I shall employ a lawyer to draw an act of incorporation for us as suggested by the Senator. There seems to be some good reason for thinking that Congress will be called early in the fall, and if we are to do anything it would seem to me that we had better be prepared to advance our request there at a very early date.

As Chairman of the Committee on Prizes, I have to state that considerable work has been done, as a result of which, and through the kindness of the editors, we have been able to publish in the professional journals a notice asking that papers be submitted to the committee.

I am happy to be able to say that the form of this notice has finally assumed a shape that seems to be fairly acceptable to all those interested.

No papers have as yet been received.

Will you kindly bring these matters before the committee for me, and advise me of their further desires.

Yours very truly,

CHARLES P. LYMAN.

A letter from Dr. J. F. Winchester, Lawrence, Mass., was also read.

LAWRENCE, MASS., May 14th, '93.

Dr. W. Horace Hoskins.

DEAR DOCTOR:—Yours of the 12th at hand. It will be impossible for me to come to New York on the 20th. As to the work being done by the committee of which I am Chairman, I would say that Dr. Wyatt Johnson has promised an article on Cornstalk Disease and Contagious Pleuro-Pneumonia of the English. Dr. J. B. Paige will take up the subject of Tuberculosis. Dr. S. Stewart will attend to the Swine.

Dr. Jos. Hughes has not even shown me the courtesy or good breeding to reply to either of two letters I have sent him suggesting that he take the subject of Actinomycosis. I will try in a general way to fill up the report that it may be acceptable for the occasion.

Yours, etc.,

J. F. WINCHESTER.

It was moved that the reports as received be placed on file in proper order. The motion was seconded and passed.

Dr. Robertson asked why the date of the Congress was changed from May to October. The Secretary replied that it was absolutely necessary that such a change should be made for several reasons. One was the negligence on the part of the veterinarians of the West and officers of the Society who failed to make the applications for a place among the list of congresses soon enough. "If we accepted May, it would have been too early, as we have done no work; September was closed to us, October only remaining. Those committees on which we depended most have done little or nothing. It has therefore been thought well to have the meeting in September and adjourn until the 16th of October. October is one of the most pleasant months of the year in Chicago. At that time the Fair will be at the topmost notch of perfection. Mr. Bonney has proffered to enable us to bring foreign delegates here, and to furnish a hall for meetings and also a public hall. The Comitia Minora deemed these good reasons for deciding that the meeting should be adjourned until October."

Dr. L. McLean thought that the Comitia Minora had not the power to change the date. He also complained of the indifference of the Western men, and suggested that the Society ought not to spread its wings too far.

In reply, the Secretary said that the men in the West were not more indifferent than those in the East.

The Secretary then read the list of those who were invited to report. They were the International Committee, Comitia Minora, Committee on Veterinary Education, Animal Food Committee and Committee on Tuberculosis.

The Secretary then asked that the names of the candi-

dates for honorary membership be produced. This, however, could not be done as the committee who had charge of making out the list had been too busy to complete it.

Dr. McLean asked whether persons who were honorary members were included among those whose expenses had to be paid.

The Chairman replied that it had already been decided not to pay their expenses.

Dr. Liautard moved that the committee be empowered to have a letter of invitation and circular, explaining the object of the Congress, written in English, French and German, and containing the names of those recommended by the committee for honorary membership, and that these letters be sent to the veterinary papers of the various countries with the request that publicity be given them. This motion was seconded and passed.

In reply to questions asked by some of the members, the Secretary stated that it had been resolved that three persons from each of the various countries should be the maximum number for honorary membership, and that these were to be selected by the committee for approval by the Association. He said also that if publicity were given to the names of those who had been selected as candidates for honorary membership, it would be an incentive for them to come to our meeting.

He said that it had been decided at the Boston meeting that any member could submit to the committee the name of any one whom he deemed worthy of membership. The names of worthy candidates should be put in print by July at the latest.

The Committee on Honorary Membership reported progress.

Dr. Huidekoper then read the invitation which he had formulated. It was considered sufficiently comprehensive, and needed only further development and greater detail.

The International Committee reported progress, and requested that they be given six days to complete their circular and be empowered to publish it.

The Secretary reported that the Pennsylvania Association

stand ready to respond to any call that may be made by the officers in charge of the Congress, and that they will do everything in their power for the promotion of its success. They have appointed a committee for considering any work that may be designated by this Association, and they have also appointed a committee for the entertainment of foreign delegates on their way to Chicago.

The Secretary then called the attention of the Comitia Minora to the re-application of John Doris, Jr. The latter was a graduate of the Cincinnati Veterinary College, and was rejected on the ground that he was a graduate of a school granting diplomas to minors. The school has now changed, and does not confer diplomas on those who are under twenty-one years of age. The Dean of the Faculty has written for the exact wording of the rejection of Dr. Doris, who will re-apply for membership.

Adjourned to meet at the call of the Secretary.

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